

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BU-096XQ999	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/37013	International filing date (<i>day/month/year</i>) 18 November 2003 (18.11.2003)	(Earliest) Priority Date (<i>day/month/year</i>) 18 November 2002 (18.11.2002)
Applicant BOSTON MEDICAL CENTER CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. _____



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

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International application No.

PCT/US03/37013

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 39/00, 39/02

US CL : 424/184.1, 234.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/184.1, 234.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
BIOSIS, SCISEARCH, VETU, VETB, AGRICOLA, JAPIO, USPATFUL, EUROPATFUL

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
MEDLINE, PUBMED

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Database EMBASE on STN, AN:1999208848, DESHPANDE, R.G. ET AL, Invasion strategies of the Oral Pathogen Porphyromonas gingivalis: Implication for Carovascular Disease, Invasion and Metastasis, 1998, Vol.18, No. 2, pages 57-69. See the Abstract.	1-7
Y	Database MEDLINE on STN, AN:1998389923, HERZBERG, M C. ET AL, Dental Plaque, Platelets and Carovascular Diseases, Annals of Periodontology, The American Academy of Periodontology, July 1988, Vol. 3, No. 1, pages 151-160. See the Abstract.	1-7
Y	Database EMBASE on STN, AN:1998417201, LAMONT, R.J. ET AL, Life Below the Gum Line: Pathogenic Mechanisms of Porphyromonas gingivalis, Microbiology and Molecular Biology Reviews, 1998, Vol. 62, No. 4, pages 1244-1263. See the Abstract.	1-7
Y	Database EMBASE on STN, AN:2001371735, LOESCHE, W.J. ET AL, Peridontal Disease as a Specific, Albeit Chronic, Infection: Diagnosis and Treatment, Clinical Microbiology Reviews, 2001, Vol. 14, No. 4, pages 727-752. See the Abstract.	1-7



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

30 March 2004 (30.03.2004)

Date of mailing of the international search report

08 DEC 2004

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Database BIOSIS on STN, AN:2002:176618, CHEN, Z. ET AL, Protease-active Extracellular Protein Preparations for Porphyromonas gingivalis, Abstracts of the General Meeting of the American Society for Microbiology, 2001, Vol. 101, pages. 117-118. See the Abstract.	1-7
Y	Database CABI on STN, AN:2000:145383, WHITAKER ET AL, Effect of an Essential Oil-containing Antiseptic Mouthrinse on Induction of Platelet Aggregation by Oral Bacteria In Vitro, Journal of Clinical Periodontology, 2000, Vol. 27, No.5, pages 370-373. See the Abstract.	1-7
X	SHAPIRA ET AL, The Effects of Stress on the Inflammatory Response to Porphyromonas gingivalis in a Mouse Subcutaneous Chamber Model, Journal of Periodontology, March 1999, Vol. 70, No. 3, pages 289-292. See the entire document.	8-12
X	VASEL ET AL, Shared Antigen of Porphyromonas gingivalis and Bacteroides forsythus, Oral Microbiology and Immunology, 1996, Vol. 11, No. 4, pages 226-235. See the entire document.	8-12
X	GENCO ET AL, A Peptide Domain on Gingipain R Which Confers Immunity Against Porphyromonas gingivalis Infection in Mice, Infection and Immunity, September 1998, Vol. 66, No. 9, pages 4108-4114. See the entire document.	8-12
X	GENCO ET AL., Influence of Immunization of Porphyromonas gingivalis Colonization and Invasion in the Mouse Chamber Model, Infection and Immunity, April 1992, Vol. 60, No. 4, pages 1447-1454. See the entire document.	8-12
X	HOUSTON ET AL, Response of Guinea Pigs to a Vaccine Containing a New Adjuvant (SAF) and Gram-Negative Bacteria, Laboratory Animal Science, February 1995, Vol. 45, No. 1, p. 58-66. See the entire document.	8-12
X	EVANS ET AL, Immunization with Porphyromonas (Bacteroides) gingivalis Fimbriae Protects Against Periodontal Destruction, Infection and Immunity, July 1992, Vol. 60, No. 7, pages 2926-2935. See the entire document.	8-12
X	PERSSON ET AL, Immunization Against Porphyromonas gingivalis Inhibits Progression of Experimental Periodontitis in Nonhuman Primates, Infection and Immunity, March 1994, Vol. 62, No. 3, pages 1026-1031. See the entire document.	8-12
X	FROLOV ET AL, In vivo Exposure to Porphyromonas gingivalis up-regulates Nitric Oxide but Suppresses Tumour Necrosis Factor-Production by Cultured Macrophages, Immunology, March 1998, Vol. 93, No. 3, pages 323-328. See the entire document.	8-12
X	ZUBERY ET AL, Bone Resorption Caused by Three Periodontal Pathogens In Vivo in Mice Is Mediated in Part by Prostaglandin, Infection and Immunity, September 1998, Vol. 66, No. 9, pages 4158-4162. See the entire document.	8-12